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| 09/440,246      | 11/15/1999  | AHMED GHEITH         | M-8016-US           | 2706             |

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EXAMINER

TODD, GREGORY G

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
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2157

DATE MAILED: 03/16/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

09/440,246

Applicant(s)

GHEITH, AHMED

Examiner

Gregory G Todd

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7,9,11-15,17,19,21-24,26-40 and 44-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-7,9,11-15,17,19,21-24,26-40 and 44-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

This is a third office action in response to applicant's amendment and request for continued examination filed, 19 November 2003, of application filed, with the above serial number, on 15 November 1999 in which claims 6, 9, 19, 26, 27, 29, 36, 45 and 46 have been amended and claim 47 has been added. Claims 1-7,9,11-15,17,19,21-24,26-40 and 44-47 are therefore pending in the application.

### ***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: With respect to claim 9, the specification does not disclose a "uniform resource locator" but rather *universal* resource locators.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. 1-7, 9, 11-13, 17, 19, 21-24, 26-31, 33, 36-40, and 44-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambert et al (hereinafter "Lambert", 6,038,601) in view of Hon et al (hereinafter "Hon", 6,185,608).

4. As per Claim 45, Lambert discloses a content caching and retrieval system that facilitates reusability of generated electronic files, wherein Lambert discloses:

a processor (at least col. 3, lines 37-40);

a computer readable medium coupled to the processor (at least col. 3, lines 44-51);

generated electronic files stored in a storage medium, each generated electronic file includes an identifier that is derived from generated presentation information stored in the file (eg. the ICEXPIRE tag included in the file) (at least col. 12, lines 38-60; col. 13, lines 30-45); and

a computer readable representation received by the system from a client computer system, the computer readable representation having a presentation state signature based on the presentation state defined, at least in part, by one or more parameters (link) selected by a user interacting with a file displayed by the client computer system, wherein the computer readable representation is useful to identify one of the generated electronic files in which stored presentation information is associated with the presentation state upon which the signature is based (URL link selected by the client for the new page) (at least col. 15, lines 34-40, 59-66);

wherein the computer readable medium includes a routine executable by the processor to determine if the presentation state signature of the computer readable

representation identifies one of the generated electronic files stored in the memory of the system, to retrieve any identified generated electronic file and to serve the retrieved file to the client computer system (at least col. 5, lines 55-60).

Lambert does not explicitly disclose *dynamically* generated files as being cached. However, the use and advantages for caching dynamic content is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Hon et al (at least col. 5, lines 16-39) Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement Hon's use of the caching server caching the dynamic content a user has requested and saving it in a file for later use as Lambert discloses caching pages a client will potentially access and to utilize the advantages of Hon's system of having different files stored in the cache for different groups of people would fulfill Lambert's goal of having pre-fetched content.

5. As per Claim 1.

- a subsequent presentation state computation routine operable to cause at least one subsequent presentation state to be computed based on the presentation state signature (a child page URL being pre-fetched from an initial parent page) (at least col. 15, lines 34-40);

- a presentation state signature computation routine operable to determine a presentation state signature for one or more subsequent presentation states (hashing a present or future URL) (at least col. 20, lines 43-60).

Lambert discloses pre-fetching child pages from a current page a user requests and looking up the child page URL in a hash table and therefore subsequent URL's are previously hashed by the server with a capable signature computation routine.

6. As per Claim 2.

- the subsequent presentation state computation routine and the presentation state signature computation routine are encoded in the computer readable medium as instructions executable on the processor, the computer readable medium being one of a magnetic storage medium, an optical storage medium, and a communications medium conveying signals encoding the instructions (at least Fig. 1B).

7. As per Claim 3.

- at least a portion of the presentation information is encoded in a markup language (at least col. 15 line 63 - col. 16 line 2).

8. As per Claim 4.

- the markup language is Hypertext Markup Language (HTML) (at least col. 15 line 63 - col. 16 line 2).

9. As per Claim 5.

- a presentation information computation routine (algorithm) operable to compute subsequent presentation information (child pages) based upon the at least one subsequent presentation state (at least col. 20, lines 62-67; col. 16, lines 28-39).

10. As per Claim 6.

- a plurality of additional computer readable representations from one or more client computer systems, each of the computer readable representations having a

presentation state signature based on a presentation state defined, at least in part, by one or more parameters (link) selected by a user interacting with a file displayed by one of the client computer systems that are useful to identify one of the generated electronic files in which stored presentation information is associated with the presentation state upon which the signature is based (URL link selected by the client for the new page) (at least col. 15, lines 34-40, 59-66);

wherein the routine is further executable by the processor to determine if the presentation state signatures of the computer readable representations identify one of the generated electronic files stored in the memory of the system, retrieving the described generated electronic files, and serving the retrieved files to the client computer system from which the computer readable representation was received (at least col. 5, lines 55-60).

11. As per Claim 7.

- a subsequent presentation state computation routine operable to cause at least one subsequent presentation state to be computed based on each presentation state signature (child page of the child page, level 2, etc.) (at least col. 16, lines 4-11; col. 20 line 62 - col. 21 line 26)

a presentation state signature computation routine operable to determine a presentation state signature for each subsequent presentation state (child page URL (second presentation state) is looked ahead on having already been hashed and being in the hash table) (at least col. 20, lines 43-60; col. 16, lines 4-11).

12. As per Claim 9.

- the computer readable representation is universal resource locator that includes a filename and state information for one of the generated electronic files (domain name of hashed URL and child html page) (at least col. 16, lines 4-11; col. 20, lines 43-60).

13. As per Claim 11.

- a file cache operable to store the generated electronic files (at least col. 34, lines 22-29).

14. As per Claim 12.

- the file cache is a file server computer system (at least col. 34, lines 22-29).

15. As per Claim 13.

- the presentation state signature computation routine uses a hashing function to determine the presentation state signature (see above rejection for Claim 1) (at least col. 20, lines 43-60).

16. As per Claim 17.

- each computer readable representation is a Universal Resource Locator (URL) comprising the presentation state signature based on the presentation state (associating hash value in hash table with URL) (at least col. 20, lines 43-67; col. 16, lines 28-39).

17. As per Claim 19.

- the computer readable medium further includes state information that at least one subsequent presentation state includes version information of the file displayed by the client computer system (eg. when page was last accessed) (at least col. 34 line 61 - col. 35 line 12).



18. As per Claim 21.

- a file cache and a look-ahead manager, the look-ahead manager operable to perform at least one of:

- determining if the file cache includes a generated electronic file having presentation information characterized by the presentation state signatures for one or more subsequent presentation states (at least col. 5, lines 55-60);

- causing a presentation information computation routine to compute subsequent presentation information based upon one or more subsequent presentation states (lookahead algorithm computing mutli-level child pages) (at least col. 20, lines 5-34, 62-67).

19. As per Claim 22.

- the determining if the file cache includes a generated electronic file includes searching the file cache for a file having a filename (domain name of hashed URL) including the presentation state signature from the computer readable representation (at least col. 16, lines 4-11; col. 20, lines 43-60).

20. As per Claim 23.

- a web server application operable to receive the computer readable representation (inherently, an application is used on a caching server, see col. 6, lines 25-55 for caching server details) and to serve the retrieved file to the client computer system (at least col. 5, lines 55-60).

21. As per Claim 24.

- the routine comprises a web server application (at least col. 5, lines 55-60).

22. As per Claim 26.

- the client computer system is one of a plurality of interconnected client computer systems operating in a distributed computer environment and coupled to the server computer system (at least col. 2, lines 24-34).

23. As per Claim 27.

- the plurality of interconnected client computer systems and the server computer system are coupled via a network (at least col. 2, lines 24-34).

24. As per Claim 28.

- network is the Internet and each of the files are web pages (at least col. 1, lines 13-17).

25. As per Claim 29, Lambert discloses a method of caching and retrieving cached generated files that each include presentation information characterized by respective presentation states, wherein each generated file is associated with a file identifier that is derived from state information that describes contents of the associated generated electronic file and the file is operable to be provided by an application running on a server computer system to at least one client computer system, wherein Lambert discloses:

receiving a file request that includes state information based on selections of a user interacting with a web page using at least one client computer system (at least col. 5, lines 55-60);

determining whether the file request identifies one of the cached generated files (at least col. 5, lines 55-60);

retrieving the generated file identified by the file request and transmitting the file to the at least one client computer system if the file exists in the cache (at least col. 5, lines 55-60);

computing presentation information based on the information in the file request when a generated file does not exist in the cache (at least col. 6, lines 25-38);

saving the computed presentation information in a file in the cache (local storage), thus creating a generated file, and transmitting the generated file to the at least one client computer system (at least col. 12, lines 38-48).

Lambert does not explicitly disclose *dynamically* generated files as being cached. However, the use and advantages for caching dynamic content is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Hon et al (at least col. 5, lines 16-39) Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement Hon's use of the caching server caching the dynamic content a user has requested and saving it in a file for later use as Lambert discloses caching pages a client will potentially access and to utilize the advantages of Hon's system of having different files stored in the cache for different groups of people would fulfill Lambert's goal of having pre-fetched content.

26. As per Claim 30.

- the file request includes at least one of a filename based on the first state (domain name of page), and first state information (at least col. 16, lines 4-11; col. 20, lines 43-60).

27. As per Claim 31.

- the file request includes a filename computed from the information based on selections by a user interacting with a web page using a hash function (at least col. 20, lines 43-60).

Lambert discloses pre-fetching child pages from a current page a user requests and looking up the child page URL in a hash table, which would implicitly mean that the pre-fetched, and therefore subsequent, URL's are previously hashed with a hash function.

28. As per Claim 33.

- the file request is a URL (at least col. 20, lines 62-67; col. 16, lines 28-39).

29. As per Claim 36.

- computing at least one subsequent state based on the selections by a user interacting with a web page (at least col. 15, lines 59-66);

computing a signature of the at least one subsequent state based on at least one subsequent state (hashing a present or future URL) (at least col. 20, lines 43-60); and

including the signature of the at least one subsequent state and the at least one subsequent state in the presentation information (associating hash value in hash table with the URL) (at least col. 20, lines 43-67; col. 16, lines 28-39)..

30. As per Claim 37.

- method encoded in a computer readable medium as instructions executable on a processor, the computer readable medium being one of a magnetic storage medium, an optical storage medium, and a communications medium conveying signals encoding the instructions (at least Fig. 1B).

31. As per Claim 38.

Generated files created in accordance with the method of claim 29 (at least col. 16, lines 49-60; col. 15, lines 41-52; col. 16 line 66 - col. 17 line 10).

32. As per Claim 39.

- at least a portion of the presentation information of each generated file is encoded in a markup language (at least col. 15 line 63 - col. 16 line 2).

33. As per Claim 40.

- the markup language is one of Hypertext Markup Language (HTML) (at least col. 15 line 63 - col. 16 line 2).

34. As per Claim 44.

- the web page is a product configuration web page and the file request is a Universal Resource Locator (URL) that includes state information comprising information based on the user configuration selections (associating hash value in hash table with URL) (at least col. 20, lines 43-67; col. 16, lines 28-39).

35. As per Claim 46, Lambert discloses a content caching and retrieval system that facilitates reusability of cached generated electronic files, wherein Lambert discloses:

means for receiving a file request that includes information based on selections of a user interacting with a web page using at least one client computer system (at least col. 5, lines 55-60);

means for determining whether the file request identifies one of the cached generated electronic files (at least col. 5, lines 55-60);

means for retrieving the generated electronic file identified by the file request and transmitting the file to the at least one client computer system if the file exists in the cache (at least col. 5, lines 55-60);

means for computing presentation information based on the information in the file request when a generated file does not exist in the cache (sending request to retrieve content) (at least col. 5, lines 55-60); and

Lambert does not explicitly disclose dynamically cached data or saving a previously non-cached document in the cache as a file. However, the use and advantages for caching dynamic content is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Hon et al (at least col. 5, lines 16-39) Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement Hon's use of the caching server caching the dynamic content a user has requested and saving it in a file for later use as Lambert discloses caching pages a client will potentially access and to utilize the advantages of Hon's system of having different files stored in the cache for different groups of people would fulfill Lambert's goal of having pre-fetched content.

36. As per Claim 47.

wherein the one or parameters selected by a user include configuration options selections (at least Hon col. 5, lines 26-58).

37. Claims 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambert et al (hereinafter "Lambert", 6,038,601) in view of Hon et al and further in view of Colby et al (hereinafter "Colby", 6,006,264).

Lambert discloses a server determining whether a file exists in a cache (at least col. 5, lines 55-60) and if not it computes the presentation information from another server. Lambert and Hon do not disclose the server determining cache files from a file not found error such as an HTTP error 404. However, the use and advantages for using such an error detection is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Colby (at least Colby col. 12, lines 6-13). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the error detection of Colby's server with Lambert and Hon's file-detecting cache server because this would enhance the probability of correctly determining if the web page is in the server's cache, and using an http 404 error is a commonly used method of telling a system a page is no longer valid on the internet; with Lambert and Hon's server needing some way of determining if the web-page to pre-fetch is already on the system, so a common internet method of determining if a file is on a server is to query the page and if an error is detected in the page retrieval, report it to the requesting system. Thus, Lambert and Hon's server would detect the error and know that the page is no longer valid and attempt to re-fetch it from another server.

38. Claims 14-15 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambert et al (hereinafter "Lambert", 6,038,601) in view of Hon et al and further in view of Mattis et al (hereinafter "Mattis", 6,289,358).

Lambert discloses using a hash table to look up a document's URL (presentation information state and signature) (at least col. 20, lines 43-60). Lambert and Hon do not

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explicitly disclose using a one-way hash function such as Snefru, N-Hash, MD5, Secure Hash Algorithm (SHA), RIPE-MD, or HAVAL. However, the use and advantages for using such a hashing function is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Mattis (at least Mattis col. 28, lines 50-58). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement Mattis' one-way URL hashing function (MD5) with Lambert and Hon's hashing because this would enhance the expandability and compatibility of Lambert and Hon's system and also utilize the different advantages of using the one-way hash function, thus allowing multiple documents to be quickly and easily stored and looked up in Lambert and Hon's hash table using the URL-specific hash value.

### ***Response to Arguments***

39. Applicant's arguments, see pages 11-16, filed 19 November 2003, with respect to the rejection(s) of claim(s) 45 and 29 under Lambert et al have been fully considered and, while Lambert does disclose the files are generated dynamically as the user requests new pages and links, when the algorithm dynamically restarts the process all over again from the new page (at least col. 16 line 66 - col. 17 line 10), Applicants amendments for dynamically generated files are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Lambert in view of Hon et al.



***Conclusion***

40. **Newly cited Copeland et al, Batchelder et al, and Holt, III are cited for disclosing pertinent information related to dynamic content caching;** in addition to previously cited Chen et al, Jiang et al, Brown et al, Mogul, Becker et al, Kavner, Berstis, Thacker et al, Parthasarathy et al, Nelson et al in addition to newly cited Eilbott et al and Gupta et al are cited for disclosing pertinent information related to the claimed invention. Applicants are requested to consider the prior art reference for relevant teachings when responding to this office action.

41. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory G Todd whose telephone number is (703)305-5343. The examiner can normally be reached on Monday - Friday 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (703)308-7562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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Gregory Todd

Patent Examiner

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